

Amendments to the Claims

Please amend claim 1; and add new claims 24-28. The following listing of claims replaces all prior versions and listings of claims in the present invention:

1. (Original) An illumination device comprising:
 - a substrate having a surface and a cavity in the surface;
 - at least one light emitting diode (LED) mounted within the cavity;
 - a phosphor monolayer comprising phosphor particles overlying the LED, the phosphor particles for converting the emitted light into white light, the phosphor monolayer adhered to the LED by a monolayer of adhesive material.
2. (Previously Presented) The illumination device of claim 1 further comprising a thick layer of transparent material encapsulating the LED.
3. (Previously Presented) The illumination device of claim 1 wherein the substrate comprises a heat sink and the LED is thermally coupled to the heat sink.
4. (Original) The illumination device of claim 1 wherein the LED is a blue or ultraviolet LED.
5. (Original) The illumination device of claim 1 wherein the phosphor monolayer is a monolayer of phosphor particles.
6. (Original) The illumination device of claim 1 wherein the phosphor comprises a YAG:Ce phosphor.
7. (Previously Presented) A method for making an illumination device comprising one or more white light LEDs comprising the steps of:
 - providing a workpiece comprising a substrate having a surface including one or more cavities that contain one or more LEDs connected to electrical leads;

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forming a coating of tacky adhesive material overlying at least one of the LEDs;

exposing the coating of tacky material to particles comprising phosphor material to form a self-limiting coating of particles overlying the at least one LED; and

curing the tacky adhesive material.

8. (Previously Presented) The method of claim 7 further comprising the steps of applying an optical material in the cavity to encapsulate the coated LED.

9. (Original) The method of claim 7 wherein the substrate comprises a heat sink and the LED is thermally coupled to the heat sink.

10. (Previously Presented) The method of claim 7 wherein at least one of the LEDs is a blue or ultraviolet LED.

11. (Previously Presented) The method of claim 7 wherein the coating of tacky adhesive material comprises a monolayer of tacky adhesive material.

12. (Original) The method of claim 7 wherein the coating of particles comprises a monolayer of particles.

13. (Original) The method of claim 7 wherein the tacky adhesive material is cured by heating.

14. (Previously Presented) The method of claim 8 wherein the optical material applied to encapsulate the LED is applied by syringe injection or by injection molding.

15. (Previously Presented) The method of claim 7 further comprising the step of dicing the workpiece into a plurality of white light LED devices.

16. (Original) The method of claim 7 further comprising the step of masking portions of the workpiece prior to coating with tacky adhesive.

17. (Original) Apparatus for coating phosphor particles on adhesive-coated LED workpieces comprising:

an enclosed particle coating chamber for receiving the workpieces,
a reservoir of phosphor particles to be coated, coupled to the chamber;
a source of pressurized gas coupled to the chamber through a Venturi Nozzle; and
a recycling chamber for receiving and recycling unused particles coupled to the chamber.

18. (Currently Amended) An illumination device comprising:
a substrate having a cavity;
at least one light emitting diode (LED) mounted within the cavity;
~~a tacky material overlying the at least one LED; and~~
a self-limiting layer comprising phosphor particles adhered to the LED by a layer of adhesive ~~the tacky material~~.

19. (Previously Presented) The illumination device according to claim 18 further comprising an encapsulant overlying the layer comprising phosphor particles.

20. (Previously Presented) The illumination device according to claim 18, wherein the substrate comprises a heat sink and the at least one LED is thermally coupled to the heat sink.

21. (Previously Presented) The illumination device according to claim 18, wherein the at least one LED comprises a blue LED.

22. (Previously Presented) The illumination device according to claim 18, wherein the at least one LED comprises an ultraviolet LED.

23. (Previously Presented) The illumination device according to claim 18, wherein the phosphor particles comprise YAG:Ce.

24. (New) The illumination device according to claim 18, wherein the adhesive material is silicone.

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25. (New) The illumination device according to claim 18, wherein the adhesive material has an index of refraction between about 1.7 and about 3.0.
26. (New) The illumination device of claim 1, wherein the adhesive material comprises silicone.
27. (New) The method of claim 7, wherein the tacky adhesive material comprises partially cured silicone.
28. (New) The method of claim 7, wherein the tacky adhesive material has an index of refraction between about 1.7 and about 3.0.